

Window Box and Mounting System

Cross Reference to Related Applications

This application is a Continuation of a Provisional Application No. 60/486,689 having a filing date of 07/11/2003.

Statement Regarding Fed Sponsored R & D (none)

Background of the Invention

The invention relates to window boxes and the manner in which they are mounted to a structure. Window boxes, having greenery and/or flowers placed therein, are a significant asset to a building's appearance, yet they are not commonly used for four reasons:

First, window boxes often leave installation up to the user or inhabitant of the building or can be difficult to install. Others may require the use of visible brackets, or do not securely attach to the building but rather rest on the above mentioned brackets. Systems that rely on the force of gravity could be hazardous in severe weather or when the window box is left empty or becomes light in weight due to insufficient watering.

Secondly, window boxes often deteriorate in harsh weather conditions. They may not be attached secure enough to withstand strong winds, are often made of materials that will rot or rust.

Thirdly, window boxes can be difficult to maintain in inclement weather or seasonal use.

Fourthly, no prior art was found to be designed for use in conjunction with storm shutter systems. Every new building in South Florida, for example, is now required to have wind resistant glass or shutters to meet the building codes. Although window boxes are commonly found commercially, no prior art offers installment solutions and the flexibility needed for seasonal use or in tandem with some storm shutter systems.

Design Patent Nos. D 451,742 to Jones et al, D448,321 to Jones et al, and D460,384 to Chalmers et al, all consist of window box designs that fail to address the need to be flexible in installation. The designs offer holes in the back where the user may insert a screw or bolt to attach the window box to a structure. Often, the depth of the window box makes using drills or other power tools difficult or impossible to use. If the box is directly mounted onto the building, the installation is permanent and significant effort is required for its removal. If the window box is mounted onto a bracket or mounting bar instead, the bracket or bar must support both the top and the bottom of the window box back if the window box is to lay level against the structure. These window box designs lack a solution for installation, but rather leave it up to the user to determine a mounting method. On structures with some storm shutter systems, the permanence of the direct installation makes these window boxes incompatible.

Window boxes that do offer different mounting systems often use some form of brackets as is shown in U.S. Patent No. D338,637 to Shenkar (1993), where the bracket is attached to the wall first and then the window box to the bracket. In this case the brackets are visible when the window box is installed or in use, and if the window box were to be removed, the bracket would extend away from the existing structure. Brackets that are left unused are aesthetically undesirable, but could also pose potential hazards to humans in areas where people congregate. Additionally, on structures with storm shutter systems, brackets may need to be removed before the storm shutters can be installed.

Other mounting systems rely on a window sill or other form of indentation in the wall as is shown in Patent Nos. 4897,958 to Brydges (1990), 4,048,754 to Laux (1977) and 5,191,746 (1993). Not all window boxes are intended to be placed directly below a window. Rather some may desire a window box to be mounted several feet below a window to allow for a larger plant display without blocking the views out of a

window. In addition, not all windows have a window sill substantial enough to support said mounting systems. In other instances a window box may be used to decorate a large wall when no window is present at all. Window boxes with mounting systems that rely on a sill as support, severely limit the choice where a user can mount a window box, and often interfere with some storm shutter systems.

Brackets alone have been designed specifically for use with window boxes. These brackets are considered independent from the window box and don't necessarily match one particular but are general in function, as is shown in Patents No. 4,817,907 to Cougan (1998), D409,077 to Brooks (1999), 1,809,216 to Quandt (1927) and 5,368,267 to Howard (1994). In the cases of Howard and Quandt, these brackets require a window sill or some kind of wall indentation for installation. As stated above, brackets that require a sill severely limit the placement of the window box. In the case of Cougan, the brackets may be located anywhere on a wall, with or without a sill. However, depending on the style of the window box, the window box may or may not be secured to the brackets. Additionally with Cougan, the brackets are visible with the window box installed and with the window box removed, the brackets would stick out from the wall causing problems for storm shutters and potential hazards for humans.

Storm shutters have been an important part of buildings in recent years, especially in areas like South Florida. Storm shutter systems vary in style and design, but all serve the same function. To protect exposed glass from strong winds and flying debris in a severe storm. any window accessory used on or around windows with storm shutter systems will need to consider the storm shutter design. This invention discovers a new use of an existing hardware, and adapts an old well known accessory, the window box, to a modern building.

In conclusion, insofar as the inventor is concerned, no window box or mounting system in the prior art provides a unit that fulfills all of the following criteria: The window box system:

- 1) is strong and secure, yet easy to install
- 2) is versatile in that it can be mounted on any level surface;
- 3) the window box may be removed quickly and simply without the use of tools for seasonal use or inclement weather, and
- 4) is compatible with most types of storm shutter systems.

Summary

It is important to understand that this actual aesthetic design of the window box is not what is unique, rather it is the mounting system and added features to the back of the window box that qualify this invention for the application of a utility patent.

The window box has been modified from the prior art in that it has support bars located on the bottom back of the window box and includes a mounting bar fitted to match the length of the window box. Together, the modified window box design and mounting bar from the basic unit will not slant or pull off away from the wall and the mounting system will be hidden from view when the window box is installed and it offers a strong and easy installation of the mounting bar and allows the window box to be installed without the use of tools and enables window boxes to be used on buildings with varies types of storm shutter systems.

Brief description of the Drawings

Fig. 1 is a perspective right-side view of the window box with an exploded view of the mounting system;

Fig. 2 is a back view of the window box;

Fig. 3 is a top view of the window box showing the bottom of the window box in more detail than Fig. 1;

Fig. 4 is a lateral cross-sectional view of the mounting bar;

Fig. 5 is a front view of the mounting bar;

Fig. 6 is a lateral cross-sectional view of the mounting bar and window box as seen when installed on a wall.

Detailed Description of the Invention

Fig. 1 is a perspective view taken from the user's right side of the window box 11 and an exploded view of the complete mounting system. The window box 11 in this Fig. is 45 inches in length, however, all dimensions of the window box are for illustrative purposes only, as it is the intention that this mounting system can be used with any size window box or object. The window box 11 can be made of aluminum, although, the material is not the object of this invention as any other material could be used to provide a similar utility. The advantages and reasons for aluminum in the described window box design box 11 is that aluminum does not rust.

Fig. 1 illustrates that a mounting bar 12 (made of aluminum) is attached using conventional hardware (e.g. TEK screw in masonry) and the window box 11 is then attached to the mounting bar 12 using stainless steel bolts 16 and wing nuts 15 at regular intervals. Also showing (but better illustrated in Figs. 2 & 6) are two support bars 13. These support bars could again be made of a different material or style so long as they serve the same function: that is, to provide support at the appropriate width to compensate for the width of the mounting bar 12 and an attachment bar 14. Fig. 2 is a back view of the window box 11 showing the support bars 13, attachment bar 14 and a general outline of the window box 11. Support bar 13 could be altered for aesthetic purposes (e.g. made into circles or other shapes) so long as their width matches the width of the mounting bar 12 and the attachment bar 14 combined. In

some window box designs it may be desirable to have the window box slant slightly downwardly for drainage. In that case support bars could be adjusted to a slightly smaller or larger size.

Fig. 3 shows the bottom of the window box 11. The bottom contains four perpendicular supports under a sheet of aluminum expanded metal 18, as well as the support bars 13.

Fig. 4 is a lateral cross section of the mounting bar 12 showing the C-shaped channel 19 where a bolt 16 slides in from either end and may be located at any location along the mounting bar 12.

Fig. 5 is a front view of the mounting 12 showing the location of the C-shaped channel 19 and the location of the conventional hardware 17 which is used to attach the mounting 12 to the surface of the structure. For example, in masonry a #10 x 1½ TEK screw may be used to secure the mounting bar 12.

Fig. 6 is a lateral cross section of the entire mounting system and the back of the window box as seen installed. This view shows how the conventional hardware 17 is attached to the mounting bar to the wall, how the bolt 16 and the wing nut 15 secures the window box 11 to the mounting bar 12 and how the support bar 13 braces the window box 11. This Fig. 6 also illustrates the importance of the support bars 17 without which the window box 11 would pull away from the wall weakening the mounting bar 12.

Catalogue of Reference Characters

- | | |
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| 11 | Window box |
| 12 | mounting bar |
| 13 | support bar |
| 14 | attachment bar |
| 15 | stainless steel wing nut |

- 16 stainless steel bolt
- 17 conventional hardware (e.g. #10 x 1½ TEK screw for masonry
- 18 expanded metal grate
- 19 C-shaped channel

Operation

In operation, one may use this window box by planting directly inside the box with the use of a liner, or may use pots inserted into the window box. This particular window box size was designed for four 10" pots and made of aluminum so it would be rust resistant and light weight. It is recommended that pots be used in instances of severe weather which might require that the window boxes be removed quickly to enable the installation of storm shutters. The window box itself is easy to be removed, however when filled with soil and plants, the window box may become very heavy. The use of pots allows the user to remove the plants and soil one pot at a time, making the removal of plants and planting in a simple manner. Using pots is also easier for replanting or for seasonal use.

In cases where storm shutters are present, if the same mounting bar style is used to support the bottom of the storm panels, the window boxes may be attached directly to the storm shutters mounting bar. However, if the storm shutter hardware does not match the mounting bar style or the shutter hardware is not in a desired location, the mounting bar may be placed above or below the existing hardware. In most cases the mounting bar without the window box will not interfere with the installation of the shutters.

What I claim is: